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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/682,024	07/11/2001	Noboru Kamijo	JP920000131US1	2679

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EXAMINER	
LESPERANCE, JEAN E	
ART UNIT	**PAPER NUMBER**
2674	

DATE MAILED: 03/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/682,024	KAMIJO ET AL.	
	Examiner	Art Unit	
	Jean E Lesperance	2674	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 December 2005* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-8,10-14 and 17-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-8, 10-14, 17, and 18-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 July 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. The amendment filed December 21, 2005 is entered and claims 1, 3-8, 10-14, 17 and 18-20 are pending.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 3-8, 10-14, 17 and 18 have been considered but are moot in view of the new ground(s) of rejection.

Drawings

3. This application, filed under former 37 CFR 1.60, lacks formal drawings. The informal drawings filed in this application are acceptable for examination purposes. When the application is allowed, applicant will be required to submit new formal drawings. In unusual circumstances, the formal drawings from the abandoned parent application may be transferred by the grant of a petition under 37 CFR 1.182.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 4-7, 11-14 and 17 are rejected under 35 U.S.C. 102(b) as being unpatentable over US Patent 4,988,981 ("Zimmerman et al.") in view of US Patent #6,765,553 ("Odamura")

Regarding claim 1, Zimmerman et al. teach a device providing a display screen and performing predetermined processing by operating a pointer displayed on the display screen the device (the control signals are used to manipulate a graphical representation of the operator's hand which is displayed on a monitor coupled to the computer system, and the graphical representations of the operator's hand manipulates virtual objects or tools also displayed by the computer (abstract)) comprising:

a display controller for controlling a display position of the pointer on the display screen (host computer, Fig.1 (16) which inherently includes a display controller to control display 28);

a displacement detector for detecting a displacement of the device itself (the glove assembly 12 contains sensors that detect the flexing of the fingers and other gestures of the hand of an operator (column 3, lines 22-24); and

wherein the displacement detector comprising an image sensor wherein image sensed by the image sensor is processed to obtain a displacement of the device itself (a glove worn on the hand which includes sensors for detecting the gestures of the hand, as well as hand position sensing means coupled to the glove and to the computer system for detecting the position of the hand with respect to the system (abstract)). Accordingly, the prior art teaches all the claimed limitations with the

exception of providing a pointer moving device for moving the pointer on the display screen based on the detected displacement of the device itself.

However, Odamura teaches a method of moving a cursor in a display screen of a handy terminal, including the steps of (a) detecting a direction in which a body of a handy terminal is inclined and an inclination angle by which the body is inclined, (b) moving a cursor in the display screen in accordance with the inclination direction and angle detected in the step (a) (column 4, lines 30-36).

Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to utilize the handy terminal as taught by Odamura in the computer data entry disclosed by Zimmerman et al. because this would provide a method of scrolling data displayed in the display screen of a handy terminal.

Regarding claim 4, Zimmerman et al. teach the image sensor comprising an infrared sensor (the light source 44 is preferably an infrared light emitting diode (column 4, lines 27 and 28)).

Regarding claim 5, Zimmerman et al. teach an operator for activating the image sensor (the graphical representations of the operator's hand manipulates virtual objects or tools also displayed by the computer (abstract)).

Regarding claim 6, Zimmerman et al. teach the operator further includes the function for directing a selection an object pointed to by the pointer or for the execution of predetermined processing defined for the object whereby the operator has a plurality of functions (glove assembly 12 contains sensors that respond to the gestures of the operator's hand. The software receives and interprets gesture indicating data from the

sensors of the glove assembly 12 and enters commands into the computer 16 according to the gestures recognized. These commands relate to the manipulation of virtual objects created by the computer 16 and displayed on the display screen 28 (column 4, lines 55-62)) where different gestures represent plurality of function.

Regarding claim 7, Zimmerman et al. teach the device is of a wristwatch type (the forward and back flexing of the wrist can indicate vertical positioning of the screen cursor 26, while left and right flexing of the wrist can indicate horizontal positioning of the screen cursor (column 5, lines 41-44)).

Regarding claim 11, Zimmerman et al. teach a method for moving a position pointer displayed in a display of a device (the present invention is especially well adapted for use with a pictorial or symbolic programming language having a dynamic cursor which corresponds in shape to the shape of the glove and moves on the screen in response to movement of the glove in space (column 2, lines 44-48), comprising:

a first step of using an image sensor to take an image of a physical object facing the device continuously and detecting a relative displacement between the taken object and the display (As the user of the system moves his hand in space, the position and orientation of the glove are continuously detected by the computer system as shown by block 140. After each determination of the position of the glove, the display 28 is updated to reflect the new glove position and orientation, as indicated by block 142. After the display is updated, the position and orientation of the glove are checked to determine whether an object has been "picked up" on the screen. This may be achieved using any desired well known algorithm, for example, by determining whether

at least two points on the representation of the glove are coincident with at least two points on the object (column 6, lines 16-28)). Accordingly, the prior art teaches all the claimed limitations with the exception of providing a second step for changing a display position of the pointer displayed on the display based on the detected displacement.

However, Odamura teaches a method of moving a cursor in a display screen of a handy terminal, including the steps of (a) detecting a direction in which a body of a handy terminal is inclined and an inclination angle by which the body is inclined, (b) moving a cursor in the display screen in accordance with the inclination direction and angle detected in the step (a) (column 4, lines 30-36).

Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to utilize the handy terminal as taught by Odamura in the computer data entry disclosed by Zimmerman et al. because this would provide a method of scrolling data displayed in the display screen of a handy terminal.

Regarding claim 12, Zimmerman et al. teach calculating a motion vector at a certain place in an image based on be movement of the image that was taken multiple times and obtaining a relative displacement between the object and display based on the calculated motion vector (As the user of the system moves his hand in space, the position and orientation of the glove are continuously detected by the computer system as shown by block 140. After each determination of the position of the glove, the display 28 is updated to reflect the new glove position and orientation, as indicated by block 142. After the display is updated, the position and orientation of the glove are checked to determine whether an object has been "picked up" on the screen. This

may be achieved using any desired well known algorithm, for example, by determining whether at least two points on the representation of the glove are coincident with at least two points on the object (column 8, lines 16-28)).

Regarding claim 13, Zimmerman et al. teach moving the device relative to the object the relative displacement between the object and the display is obtained by inverting a sign of the motion vector (As the user of the system moves his hand in space, the position and orientation of the glove are continuously detected by the computer system as shown by block 140. After each determination of the position of the glove, the display 28 is updated to reflect the new glove position and orientation, as indicated by block 142. After the display is updated, the position and orientation of the glove are checked to determine whether an object has been "picked up" on the screen. This may be achieved using any desired well known algorithm, for example, by determining whether at least two points on the representation of the glove are coincident with at least two points on the object (column 8, lines 16-28)) where the user's hand is inherently capable of moving forward and backward to create two position points that are opposite to each other.

Regarding claim 14, Zimmerman et al. teach generating a time-series moving pattern of a certain place based on a position of the certain place in a principal image and position of a place corresponding to the certain place in a plurality of other images that were taken apart in time from the principal image (The hand position sensing means preferably includes one or more ultrasonic transmitters affixed to the glove assembly, a stationary receiver comprising three separate spaced-apart ultrasonic

receiving units, and a control circuit that measures the time delay of pulsed ultrasonic signals from the transmitter to the three receivers. The time delay provides a measure of the spatial position of the operator's hand. The signal processing means includes interface circuitry for coupling the glove to the host computer, for positioning a hand-shaped cursor on the display screen of the computer according to the position of the operator's hand, for responding to output signals from the flex sensors, and for manipulating virtual objects defined by the computer according to commands represented by the gestures and movement of the operator's hand (column 2, lines 21-36); and

comparing the generated time-series moving pattern with a plurality of model patterns registered in advance to select a most approximate model pattern (Comparator U31 compares a reference voltage Vr with the potential on the Y output terminal. When the Y output terminal exceeds the reference voltage, which is approximately 2/3 of 5 volts, the output of comparator U31 goes to ground potential. This drop in potential on node /F is interpreted by the host computer as an interrupt signal (column 7, lines 29-35);

wherein the second step comprising the steps of changing a display position of the pointer based on a moving pattern that was defined for the selected model pattern (As the user of the system moves his hand in space, the position and orientation of the glove are continuously detected by the computer system as shown by block 140. After each determination of the position of the glove, the display 28 is updated to reflect the new glove position and orientation, as indicated by block 142. After the display is

updated, the position and orientation of the glove are checked to determine whether an object has been "picked up" on the screen. This may be achieved using any desired well known algorithm, for example, by determining whether at least two points on the representation of the glove are coincident with at least two points on the object (column 8, lines 16-28)).

Regarding claim 17, Zimmerman et al. teach the image sensor is located in a part of the display screen (the glove assembly 12 contains sensors that detect the flexing of the fingers and other gestures of the hand of an operator, and also contains one or more ultrasonic transducers 17 for transmitting signals to receivers 20 to enable detecting the spatial position of the glove assembly 12 with respect to the computer display (Figure 1)).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 4,988,981 ("Zimmerman et al. in view of US Patent # 6,765553 ("Odamura") and in further view of US Patent # 5,502,568 ("Ogawa et al.").

Regarding claim 3, the combination of Zimmerman et al. and Odamura fails to teach a complementary metal-oxide semiconductor or a charge coupled device.

However, Ogawa et al. teaches a CCD area image sensor Fig.9 (53).

Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to utilize the CCD as taught by Ogawa et al. in the modified computer data entry disclosed by Zimmerman et al. and Odamura because this would provide an optical position detecting unit including a light beam direction detecting section capable of detecting the direction of incidence of light with high accuracy without using optical lenses (column 2, lines 5-9).

6. Claims 8, 10 and 18 are rejected under 35 USC 103 (a) as being unpatentable over US Patent # 6,137,479 by Olsen et al. in view of US Patent # 6,765,553 ("Odamura") and further in view of US Patent # 6,304,820 ("Goto et al.").

Regarding claim 8, Olsen et al. teach a wristwatch type device (the mouse watch Fig.4C (54)) comprising:

display for displaying a screen (display, Fig.1 (26));

a case for supporting the display (a computer mouse housing 88 contains the components that perform the traditional computer mouse functions (e.g., the computer mouse 84) (Fig.7));

an attached belt attached to the case (wristband, Fig.5 (76)). Accordingly, the prior art teaches all the claim limitations with the exception of providing a touch sensor mounted in the case or the attached belt for performing a predetermined operation on an object displayed on the screen, wherein the touch sensor is provided on both sides

of the display and an image sensor wherein an image sensed by the image sensor processed to obtain a displacement of the device itself.

However, Odamura teaches a method of moving a cursor in a display screen of a handy terminal, including the steps of (a) detecting a direction in which a body of a handy terminal is inclined and an inclination angle by which the body is inclined, (b) moving a cursor in the display screen in accordance with the inclination direction and angle detected in the step (a) (column 4, lines 30-36).

Thus, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to utilize the handy terminal as taught by Odamura in the system disclosed by Olsen et al. because this would provide a method of scrolling data displayed in the display screen of a handy terminal.

Accordingly, the combination of Olsen et al. and Odamura teaches all the claimed limitations with the exception of providing a touch sensor. However, Goto et al. teach the operation switches 5 include a touch sensor (touch panel) provided on a surface of the display screen 17, and mechanical push switches provided at peripheral portions of the display screen 17 (column 3, lines 19-22).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to utilize the touch sensor as taught by Goto et al. in the combination of Olsen et al. and Odamura because this would provide a display unit that information displayed thereon can be clearly recognized from any position (column 1, lines 1 and 2).

Regarding claim 10, Odamura teaches displacement detection section for detecting a displacement of the display (a display area in the display screen 6 is scrolled or a cursor is moved in the display screen 6 in accordance with inclination direction and angle of the body 1 detected by the inclination detector 4 (column 9, lines 19-22); and

pointer position changing device for changing a display position of a pointer based on the detected results, thereby moving the pointer displayed on the screen (said central processing unit transmitting a display control signal indicative of the thus detected inclination direction and angle of said body to said display controller, said display controller moving a cursor on said display screen in accordance with said display control signal, and finalizing said cursor's position on receiving said vibration-indicating signal (column 11, lines 35-38)).

Regarding claim 18, Odamura teaches the image sensor is located in a part of the display (a vibration detector detecting vibration of the body and transmitting a vibration-indicating signal on detection of vibration of the body, the central processing unit transmitting a display control signal indicative of the thus detected inclination direction and angle of the body to the display controller, the display controller moving a cursor in the display screen in accordance with the display control signal, and finalizing the cursor's position on receiving the vibration-indicating signal (column 3, lines 27-36)).

7. Claim 19 is rejected under 35 USC 103 (a) as being unpatentable over the combination of Zimmerman and Odamura and further in view of US Patent # 5,295,204 ("Parulski").

Regarding claim 19, the combination of Zimmerman and Odamura fails to teach the image sensor has a minimum resolution of 36x36 dots.

However, Parulski teaches the button 26b is depressed and the full resolution (512.times.768 pixels) color image is scanned in three successive scans (10 seconds) and input to the computer 52 for storage and/or processing, as desired. Accordingly, the prescan is obtained at a lowered resolution sufficient for composition (and at a much faster rate) while the final, input scan utilizes the full resolution of the image sensor. The switches 26a and 26b are mounted on the scanner in a place accessible to a single hand of the user, and in particular where they may be actuated without having to resort to the keyboard 58 or to a cursor device on the display screen 56 (column 7, lines 7-33).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to utilize the resolution as taught by Parulski in the combination of Odamura and Zimmerman because this would simple, automatic color balance mode in a small, hand-manipulated film scanner that scans images into a host computer so that the user can properly balance the scene color of the image on the host's computer display screen (column 2, lines 58-63).

8. Claim 20 is rejected under 35 USC 103 (a) as being unpatentable over the combination of Olsen, Odamura and Goto and further in view of US Patent # 5,295,204 ("Parulski").

Regarding claim 20, the combination of Olsen, Odamura and Goto fails to teach the image sensor has a minimum resolution of 36x36 dots.

However, Parulski teaches the button 26b is depressed and the full resolution (512.times.768 pixels) color image is scanned in three successive scans (10 seconds) and input to the computer 52 for storage and/or processing, as desired. Accordingly, the prescan is obtained at a lowered resolution sufficient for composition (and at a much faster rate) while the final, input scan utilizes the full resolution of the image sensor. The switches 26a and 26b are mounted on the scanner in a place accessible to a single hand of the user, and in particular where they may be actuated without having to resort to the keyboard 58 or to a cursor device on the display screen 56 (column 7, lines 7-33).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to utilize the resolution as taught by Parulski in the combination of Olsen, Odamura and Goto because this would simple, automatic color balance mode in a small, hand-manipulated film scanner that scans images into a host computer so that the user can properly balance the scene color of the image on the host's computer display screen (column 2, lines 58-63).

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jean Lesperance whose telephone number is (571) 272-7692. The examiner can normally be reached on from Monday to Friday between 10:OOAM and 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Edouard, can be reached on (571) 272-7603.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(571) 273-8300 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Jean Lesperance

Date 3/2/2006

Technical Division 2629

PATRICK N. EDOUARD
SUPERVISORY PATENT EXAMINER